THE MOREHEAD PLANETARIUM SUNDIAL

"Behold, I will bring again the shadow of the degrees, which is gone down in the sundial of Ahaz, ten degrees backward."
Isaiah xxxviii 8

The SUNDIAL is an instrument for measuring time by means of the motion of the sun's shadow cast by a stile or gnomon. It is an instrument of great antiquity. The probable date of the sundial referred to in the Scriptures quoted above is about 700 B.C.

"The earliest sundial of whose construction there is certain knowledge is the dial of Berossus, a Chaldean astronomer about 300 B.C. This dial was a hollow hemisphere set with a bead at the center. The arc was divided into 12 equal parts. The dial, as a consequence, divided the day from sunrise to sunset into 12 equal parts, which were called 'temporary hours'. The length of these hours necessarily varied with the seasons.

"For 1700 years sundials, though built in various ways, were all based on the principle of temporary hours. Then about the year 1400, the introduction of clocks and other mechanical devices for measuring time made necessary the determination of equal hours. By the end of the sixteenth century the temporary hours seem to have gone out of use. Sundials by the eighteenth century were used very little, except as ornaments and relics. However, mathematicians with astronomical knowledge could compute a correction table (similar to the one utilized on the Morehead Planetarium Sundial) and give the exact number of minutes to be added, on any particular day of the year, to the sun-shadow's time to give the Local Mean Solar Time.

"A sundial is composed of two parts, the dial face or plane and the stile or gnomon. The dial face is divided into quarters and the dial must be set so that the dividing lines run toward the four lines of the compass. The dial is further marked into hour spaces, with minute divisions. The gnomon is a flat piece of metal set in the center of the dial, and, in the Northern Hemisphere pointing to the North Celestial Pole. On sundials used in the Southern Hemisphere the gnomon must point toward the South Celestial Pole.

"Sundials are known as horizontal, vertical, or equinoctial, according as their planes are in the same plane as the horizon,